

L 14307-65

ACCESSION NF: AT4048049

weight difference of the samples was never more than 0.5%, no chemical analysis was performed. Microstructural and thermal analyses were performed on each sample. The specific electrical resistance and hardness were determined. The results of tests on samples containing the usual 6:1 ratio of titanium to aluminum and having less than 10% by wt. zirconium, when heated to 500C, showed that the samples contained a new solid solution of  $\alpha + \alpha_2$  form. All alloys of this type undergo polymorphic transformations, analogous to the transformation of pure titanium and zirconium in the Ti-Zr system, in which the transformation may be pinpointed at the minimum on the temperature vs. composition curve, i.e. at 660C and 65% Zr. The specific electrical resistance and hardness, determined from tests on samples which were quenched from temperatures of 1100, 800, and 500C, follow an increasing curve; the hardness reaches a maximum in samples cooled from a composition which produces a  $\beta$ -solid solution. Orig. art. has: 4 graphs, 1 table and 5 photomicrographs.

ASSOCIATION: None

SUBMITTED: 15Jul64

ENCL: 00

SUB CODE: MM

NO REF SOV: 002

OTHER: 004

Card 2/2

ACC NR: AT6012375

SOURCE CODE: UR/0000/65 000/000/0092/0097

AUTHORS: Kornilov, I. I. (Doctor of chemical sciences, Professor); Volkova, M. A.; Pylayeva, Ye. N.

ORG: none

TITLE: Investigation of the alloys of the ternary system Ti--Al--V

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 92-97

TOPIC TAGS: titanium, aluminum, vanadium, alloy phase diagram, ternary alloy, hardness

ABSTRACT: The alloys of the system Ti-Al-V were studied. The experimental results supplement an earlier investigation by I. I. Kornilov, Ye. N. Pylayeva, M. A. Volkova, P. I. Kripyakovich, and V. Ya. Markiv (Nastoyashchiy sbornik, str. 48). The experiments were carried out with titanium iodide (99.7% Ti), AV000 aluminum (99.99%) and carbothermal vanadium (99.5% V). The phase diagrams of the system and the micro-structure, hardness, and electrical resistances of the alloys were determined. Experimental results are presented graphically (see Fig. 1). The minimum hardness and electrical resistance of alloys containing 15--16% Al and an Al/V ratio of 3:1 are due to the formation of a solid solution on the basis of the compound  $Ti_3Al$  in the ternary system.

Card 1/3

ACC NR: AT6012375

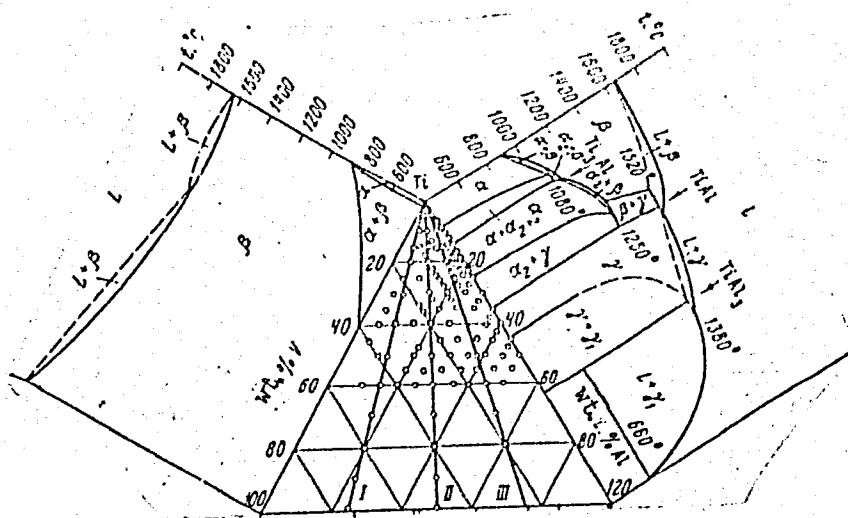
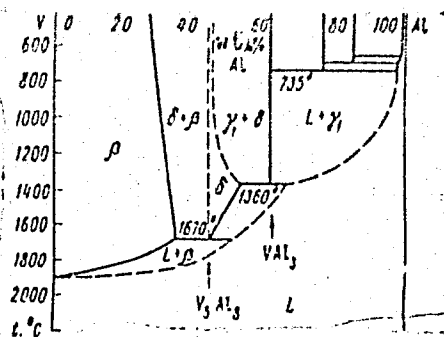


Fig. 1.  
Composition  
triangle of  
the ternary  
system Ti--Al--V.

Card 2/3

ACC NR: AT6012375



Orig. art. has: 6 figures.

SUB CODE: 11/

SUBM DATE: 02Dec65/

ORIG REF: 002/ OTH REF: 005

Card 3/3

I. 35572-36 (m)/T/W(m)/T/W(m)/T/W(m) 13P(1) 20/13

ACC NR: AP6013367

SOURCE CODE: UT/0370/66/000/002/0137/0143

AUTHOR: Kornilov, I. I. (Moscow); Pylayeva, Ye. N. (Moscow); Volkova, M. A. (Moscow)

ORG: none

TITLE: Evaluation of the creep of alloys of the Ti-Al-V system by the bonding method at elevated temperatures

SOURCE: AN SSSR. Izvestiya. Metally, no. 2, 1966, 137-143

TOPIC TAGS: creep, titanium alloy, vanadium alloy, aluminum alloy

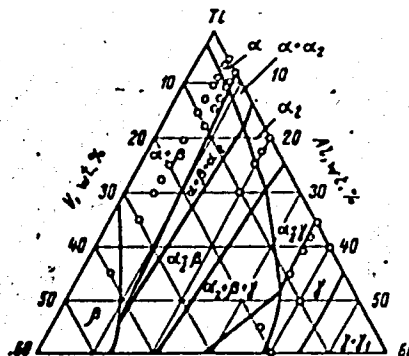
ABSTRACT: Continuing their study of the high-temperature strength of titanium alloys, the authors investigated it in the ternary system Ti-Al-V as a function of alloy composition and structure. An isothermal section of the system at 550°C was plotted on the basis of microstructural and x-ray analyses and a determination of the properties; the regions of the  $\alpha$  and  $\beta$  solid solutions of titanium and of the intermetallic compound Ti<sub>3</sub>Al ( $\alpha_2$  phase) are indicated (see Fig. 1). Alloys of the Ti-Al-V system along sections with constant aluminum contents of 5, 7.5, and 20% were found to have a maximum creep resistance near the boundary of the limiting solutions based on  $\alpha$  Ti,  $\beta$  Ti, and Ti<sub>3</sub>Al; the lowest high-temperature strength is displayed by alloys from the regions ( $\alpha + \beta$ ) and ( $\alpha_2 + \beta$ ) with a coarse two-phase structure. Alloys from the region of the  $\gamma$  phase have a high creep resistance at

Card 1/2

UDC: 669.017.13

ACC NR: AP6013367

Fig. 1. Isothermal section of a portion of the ternary system Ti-Al-V at 550°C and compositions of alloys (points) tested for high-temperature strength.



800°C and  $\sigma = 15 \text{ kg/mm}^2$ ; in tests of alloys of this series under these conditions by the standard stress-rupture strength method, the time to break was 226-446 hours. The great high-temperature strength of alloys based on the compounds  $\text{Ti}_3\text{Al}$  and  $\text{TiAl}$  opens up new prospects for the development of new alloys of this type. Orig. art. has: 4 figures and 5 tables.

SUB CODE: 11/ SUBM DATE: 22Jun64/ ORIG REF: 007/ OTH REF: 006

Card 2/2 MCLP

L 27502-66 EWT(m)/T/EWP(t)/ETI IJP(c) JH/JD/GS

ACC NR: AT6012369

SOURCE CODE: UR/0000/65/000/000/0048/0055

AUTHORS: Kornilov, I. I. (Doctor of chemical sciences, Professor); Volkova, M. A.;  
Pylayeva, Ye. N.; Eripyakevich, P. I.; Markiv, V. Ya.

ORG: none

TITLE: Investigation of equilibrium diagrams of titanium-rich alloys of the system  
Ti--Al

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego  
splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium  
alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 48-55

TOPIC TAGS: titanium, aluminum, alloy phase diagram, titanium alloy, binary alloy,  
lattice parameter

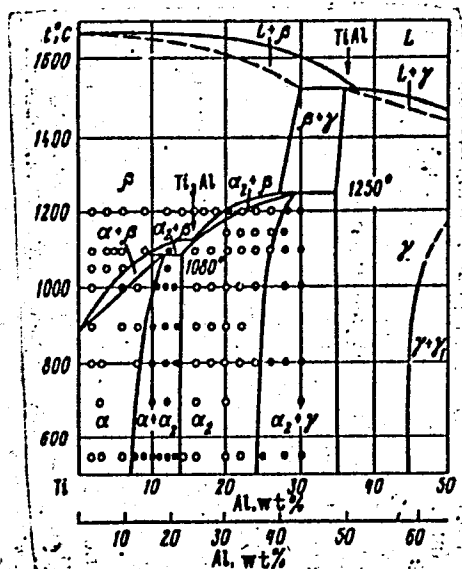
ABSTRACT: The phase diagram of the binary system Ti-Al (containing up to 30% Al) was  
determined. The diagram was constructed on the basis of thermal, microstructural,  
dilatometrical, and x-ray analysis. In addition, the specific electrical resistance  
and hardness of the alloy specimens were determined. The investigation supplements  
earlier work of N. V. Grum-Grzhimaylo, I. I. Kornilov, Ye. N. Pylayeva, and M. A.  
Volkova, (Dokl. AN SSSR, 1961, 137, No. 3, 599). The experimental results are  
summarized in graphs and tables (see Fig. 1) and compared to earlier literature data.  
A rearrangement takes place in the alloys in the temperature region from 882 to 1250C.  
These temperatures correspond to a transition from a hexagonal close-packed structure

Card 1/3

L 27502

ACC NR: AT6012369

Fig. 1. Phase diagram of the system Ti--Al.



to a body-centered structure. The curves for the properties of alloys vs composition exhibit a minimum, the composition of which corresponds to the intermetallic compound  $Ti_3Al$ . The existence of the compound  $Ti_3Al$  was corroborated by x-ray analysis. The structure of  $Ti_3Al$  was found to resemble the  $Mg_3Cd$  structure. The lattice parameter

Card 2/3



L 27502-66

ACC NR: AT6012369

of the system Ti-Al was determined as a function of the composition (see Fig. 2).

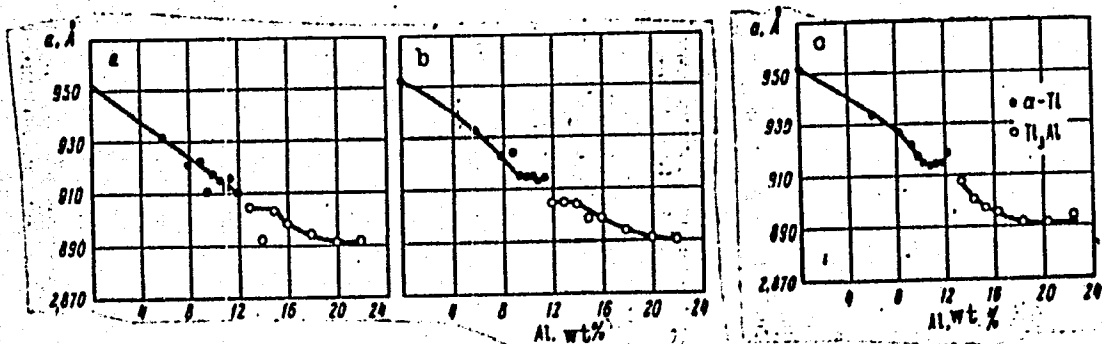


Fig. 2. Dependence of the lattice parameter of the alloy composition of the system Ti-Al annealed at 950C (a), 700C (b), and 550C (c).

Orig. art. has: 1 table and 6 figures.

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 006/ OTH REF: 004

Card 3/3 BLG

L 44790-65 EW(m)/EPR/EWP(t)/EWP(b) Ps-4 IJP(c) JD  
 UR/0020/65/161/004/0843/0846  
 ACCESSION NR: AP010833

AUTHOR: Kornilov, I. I.; Pylayeva, Ye. N.; Volkova, M. A.; Kripyakevich, P. I.;  
 Markiv, V. Ya.

TITLE: Phase composition of binary Ti-Al alloys containing from 0 to 30% Al

SOURCE: AN SSSR. Doklady, v. 161, no. 4, 1965, 843-846

TOPIC TAGS: titanium aluminum system, titanium alloy, aluminum containing alloy,  
 alloy phase composition, alloy resistivity, alloy hardness

ABSTRACT: Binary Ti-Al alloys containing from 0 to 30% Al, levitation melted or arc  
 melted in an inert gas atmosphere, were investigated in as-cast condition or de-  
 formed at 800-1000C with a reduction of 30%. The thermal analysis data showed  
 that all alloys undergo the solid state transformation from a c.p.h. to b.c.c.  
 structure. Microscopic examination and x-ray diffraction patterns revealed the  
 following phases, (solid solutions):  $\beta$ -on a  $\beta$ -Ti base,  $\alpha$ -on an  $\alpha$ -Ti base,  $\alpha_2$ -on a  
 base of the ordered tetragonal structure of  $Ti_3Al$  compound of the  $Mg_3Cd$  type. Re-  
 sults of the measurements of the resistivity and hardness closely corresponded to  
 one another and confirmed the results of the thermal, metallographic, and x-ray  
 analysis. A phase diagram of the investigated Ti-Al system based on the results  
 obtained is shown in Fig. 1 of the Enclosure. Orig. art. has: 3 figures. [MS]

Card 1/1

L 44790-65

ACCESSION NR: AP5010833

ASSOCIATION: Institut metallurgii im A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 22Sep54

ENCL: 01

SUB CODE: 1C

NO REF SOV: 003

OTHER: 004

ATD PRESS: 3256

Card 2/3

TKACHUK, V.G.; STEPANOV, V.M.; VOLKOVA, M.A.

Underground waters of the Buryat A.S.S.R. Mat. Kom. po izuch.  
podzem. vod. Sib, i Dal' Vost, no.2:154-163 '62.

(MIRA 17:8)

VOLKOVA, M.A.; PEL'MAN, S.G.; DAR'YALOVA, S.L.

Comparative distribution of colloid solutions of radioactive  
yttrium salts in animals during intra-abdominal administra-  
tion. Med. rad. 7 no.12:3-7 D'62. (MIRA 16:10)

1. Iz radiologicheskogo otdeleniya (zav. - kand.med.nauk  
M.A.Volkova) Gosudarstvennogo onkologicheskogo instituta  
imeni P.A.Gertsena.

\*

VOLKOVA, M. A.

**Excerpta Medica Sec 16 Cancer Vol. 2/4 April 54**

1777. VOLKOVA M. A. and ALEKSEYEVA S. I. *Telecurietherapy in laryngeal cancer*  
(Russian text) *Vestn. Oto-Rino-Laring.* 1953, 3 (32-38) Tables 5

From 1945-1951, 128 patients were treated. The distance used was 6 cm. and the field size was 28 sq. cm. One field daily was irradiated with a dose of 300-350  $\gamma$ -r. The total dose of 6,000-9,000  $\gamma$ -r. was administered in 25-32 days. The amount of radium is not indicated, the r./min. dose was 14. In unilateral cancers 2 fields were used, the anterior

1777 CONT

and a lateral field; in bilateral localization a contralateral field was added. In 125 cases biopsy was performed. Histologically the diagnosis of cancer was confirmed in 95 patients and in 30 the histological diagnosis was an inflammatory process. Nevertheless all these cases were considered as cancers on clinical findings only. Ten patients are living and well more than 5 yr., 6 more than 4 yr. and 6 more than 3 yr. after treatment. It is not clear whether the cured patients are of the group diagnosed histologically as cancer or of the group diagnosed as inflammation.

Körbler — Zagreb

VOLKOVA, M. A.

"Experiment With Combination Treatment of Malignant Tumors of the Superior Maxilla." Cand Med Sci, Central Inst for the Advanced Training of Physicians, Moscow, 1953. (RZhBiol, No 2, Sep 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55



USSR/Medicine - Radiology

FD-693

Card 1/1 : Pub 132 3/22

Author : Volkova, M. A., Candidate Medical Sciences

Title : ~~Research on the use of radioactive cobalt for teleradium therapy~~  
An experiment on the use of radioactive cobalt for teleradium threapy

Periodical : Vest. Rent. i Rad., 14-21, May/June, 1954

Abstract : An experiment showed that radioactive cobalt can be used successfully in place of the natural radium for teleradium therapy. Analysis of 709 patients treated in this manner indicated no deficiencies in the therapy. The exposure time and the duration of the reaction were the same as with natural radioactive substances. Recovery time of the tissue after radiation was also the same. Three tables; no references.

Institution : State Oncological Institute imeni P. A. Gertsena (Director-Docent A. N. Motnenko (deceased); scientific supervisor - Corresponding Member Academy of Medical Sciences Professor A. I. Savitskiy).

Submitted : --

~~VOZNA 10/1/67~~  
~~YOLKOVA, M.A.; MATVYENVA, T.N.~~

Telegamma-therapy of lung cancer; immediate results [with summary  
in English]. Khirurgiya 33 no.12:25-28 D '57. (MIRA 11:2)

1. Iz Gosudarstvennogo onkologicheskogo instituta imeni P.A.Gertsena  
(Nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. A.I.  
Savitskiy dir. - prof. A.M.Novikov, zav. radiologicheskim otdeleniyem  
kandidat meditsinskikh nauk M.A.Volkova)

(LUNG NEOPLASMS, ther.

telegammather.)

(GAMMA RAYS, ther. use

telegammather. in cancer of lungs)

VOLKOVA, M.A.; KISELEVA, Ye.S.

Treatment of malignant tumors of the middle ear. Vop. onk. 6  
no.3:64-68 Mr '60. (MIRA 14:2)

(EAR---CANCER)

VOLKOVA, Mariya Alekseyevna; LANDAU-TYLKINA, S.P., red.; LYUDKOVSKAYA,  
N.I., tekhn. red.

[Telegamma therapy of malignant tumors] Telegammaterapiia  
zlokachestvennykh opukholei. Moskva, Medgiz, 1961. 115 p.  
(GAMMA RAYS—THERAPEUTIC USE) (CANCER) (MIRA 15:4)

VOLKOVA, M.A.; BELYAKOV, V.A.; MEDVEDEV, Yu.A.

Distribution of depth doses from the telegamma apparatus with  
 $Cs^{137}$ . Med.rad. no.5:82-86 '61. (MIRA 14:11)

1. In Gosudarstvennogo nauchno-issledovatel'skogo onkologicheskogo  
instituta imeni P.A. Gertsena.  
(CESIUM--ISOTOPES) (GAMMA RAYS--THERAPEUTIC USE)

NOVIKOV, A. N.; VOLKOVA, M. A.; KISELEVA, Ye. S.

Radioactive colloidal gold in the combined treatment of lung  
cancer. Med. rad. no.4:8-12 '62. (MIRA 15:6)

(GOLD--ISOTOPES) (LUNGS--CANCER)

VOLKOVA, M.A.; ASHIKHMINA, I.G.

Comparative study of the distribution of radioactive colloidal gold and radioactive colloidal gold covered with stable silver in intra-abdominal administration. Med.rad. 7 no.6:32-36 Je '62.  
(MIRA 15:8)

1. Iz radiologicheskogo otdeleniya (zav. - kand.med.nauk M.A. Volkova) Gosudarstvennogo onkologicheskogo instituta imeni P.A. Gertsena.

(GOLD—ISOTOPES)

(SILVER IN THE BODY)

1/1

substantial change in quantity, micro-structure, hardness, macro- and microstructure, gas (O, H, and N) content, amt. of nonmetallic inclusions, aging, and drawability from that of conventionally produced steel. B. N. Davidenko



VOLKOVA, M.A.

Genesis of the hydrosulfur chloride calcium-sodium springs in the  
middle Lower Tunguska basin. Geol. i geofiz. no. 3:158-163 '65.  
(MIRA 18:6)

1. Institut zemnoy kory Sibirskogo otdeleniya AN SSSR, Irkutsk.

KORNILOV, I.I.; PYLAYEVA, Ye.N.; VOLODOVA, K.L.; KRIKORAVICH, P.I.;  
MARKIV, Ye.

Phase structure of alloys of the binary system Ti - Al containing  
from 0 to 30% of Al, Dokl. AN SSSR 161 no.4:843-846 Ap '65.

(MIRA 18:5)

1. Institut metallurgii im. A.A.Baykova. Submitted September 26,  
1964.

KORNILOV, I.I.; PYLAYEVA, Ye.N.; VOLKOVA, M.A.

Review of the investigation of the constitutional diagram of the  
binary system Ti - Al. Titan i ego splavy no.10:74-85 '63.  
(MIRA 17:1)

VOLKOVA, M.A., dotsent

Scientific Session of the Sverdlovsk Scientific Research Institute of Tuberculosis at the Ministry of Health of the R.S.F.S.R.  
Probl. tuberk. 41 no.4:88-91 '63 (MIRA 17:2)

VOLKOVA, M.A.; DRITS, F.A.; MISHINA, R.G.; GORBUNOVA, A.Ya.; KRAL'KO, Ye.A.

Dispensary examination without restriction for the detection of  
pulmonary tuberculosis. Prob. tub. no.1: 10-14 '63.

(MIRA 16:5)

1. Iz Irkutskogo oblastnogo protivotuberkuleznogo dispansera  
(glavnyy vrach - dotsent M.A. Volkova)  
(TUBERCULOSIS-PREVENTION)

VOLKOVA, M. A.; KISELEVA, Ye. S.; PEL'MAN, S. G.; KANEVSKAYA, A. I.

Preliminary data on the use of radioactive colloidal gold in the  
combined treatment of breast cancer. Med. rad. no.12:3-9 '61.  
(MIRA 15:7)

1. Iz Gosudarstvennogo onkologicheskogo instituta imeni P. A.  
Gertsena.

(BREAST--CANCER) (GOLD--ISOTOPES)

GRIGOR'YANTS, A.N., kand.med.nauk; VOLKOVA, M.A.

Treatment of myelomic disease. Sov.med. 26 no.7:20-23 J1 '62.

(MIRA 15:11)

1. Iz kafedry gosspital'noy terapii pediatricheskogo fakul'teta  
(ispolnyayushchiy obyazannosti zaveduyushchego - dotsent Ye.V.  
Kasatkin) II Moskovskogo meditsinskogo instituta imeni N.I.  
Pirogova.

(NARROW—CANCER)

(DOPAN)

(STEROID)

(ERGOCALCIFEROL)

KORNILOV, I.I.; BUDBERG, P.B.; VOLKOVA, M.A.; PRONKHANOV, V.F.;  
PYLAJEVA, Ye.N.

Developing a method of hot pressing of titanium and titanium alloy  
powders. Titan i ego splavy no. 1:25-32 '58. (MIRA 14:5)

1. Institut metallurgii AN SSSR.  
(Titanium—Metallurgy) (Powder metallurgy)



GRUM-GRZHYMYLO, N.V.; KORNILOV, I.I.; PYLAYEVA, Ye.N.; VOLKOVA, M.A.

Metallic compounds in the region of solid solutions of the  
system titanium - aluminum. Dokl AN SSSR 137 no.3:599-602 Mr '61.  
(MIRA 14:2)

1. Institut metallurgii im.A.A.Baykova AN SSSR. Predstavleno akademikom  
I.I.Chernyayevym.

(Titanium-aluminum alloys)

S/129/60/000/011/011/016  
E073/E535

AUTHORS: Mitrofanov, A.A., Candidate of Technical Sciences,  
Volkova, M.A., Letchford, N.I., Mochalov, G.N.,  
Engineers

TITLE: Application of Converter Steel in the Automobile  
Industry

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,  
1960, No.11, p.46.

TEXT: Data are given on industrial tests relating to the use of converter steel (0.17% C, 0.46% Mn, 0.032% S, 0.038% P) in the motor car industry. From 8 ton ingots of three commercial melts, strip was rolled which was used for producing rims of truck wheels. It was found that the chemical composition and the mechanical properties are the same as for open hearth steel. At the Gor'kiy Automobile Works 2900 such rims were produced and the performance of 1684 of them was closely observed. The number of rejects due to cracking along the weld seam during stretching of the rim was 0.87% for the experimental batch as compared to 0.71% for the batch made of open hearth steel of a similar composition. With these rims disc wheels were made which were fitted on 264 trucks.

Card 1/2

S/129/60/000/011/011/016  
E073/E535

Application of Converter Steel in the Automobile Industry

So far, these trucks have run over 50 000 km. It is concluded from the results that the investigated converter steel is as good as open hearth steel, particularly for hot rolled and cold rolled sheets which are to be used for deep drawing. There is 1 table.

ASSOCIATIONS: TsNIChM, GAZ and ZIL

Card 2/2

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Determination of the composition of aluminate solutions practically at equilibrium with silica obtained at various stages of thickening by evaporation during the treatment of bauxites. Zhur. prikl. khim. 37 no.2:250-255 F '64.

(MIRA 17:9)

VOLKOVA, N.S.; KHUTAREVA, G.V.; KRENTSEL', B.A.; POGOVIN, Z.A.;  
TOPCHIEV, A.V.

Synthesis and study of stereoregular propylene - isoprene  
copolymers. Vysokom.sped. 1 no.12:1758-1763 D '59.  
(MIRA 13:5)

1. Moskovskiy tekstil'nyy institut i Institut neftekhimicheskogo  
sinteza AN SSSR.  
(Propene) (Isoprene)

S/136/60/000/04/012/025  
E193/E283

AUTHORS: Shvartsman, B. Kh., Candidate of Technical Sciences, and  
Volkova, N. S., Engineer

TITLE: Preparation of High-Grade Alumina from Bauxites by the  
Roasting (Deville-Pechiney) Process

PERIODICAL: Tsvetnyye metally, 1960, Nr 4, pp 48-51 (USSR)

ABSTRACT: The standard Deville-Pechiney process in which  $\text{CO}_2$  is used to precipitate  $\text{Al}(\text{OH})_3$  from an aluminate solution, yields alumina containing more than 0.15%  $\text{SiO}_2$ , i.e. material of the G2 or G3 grade. The object of the investigation, described in the present paper, was to explore the possibility of modifying this process to make it capable of producing high-purity alumina, corresponding to grades G0 or even G00, without lowering the overall degree of decomposition of the aluminate solution below 90%. To this end, a method of so-called combined decomposition of the aluminate solution was used, which combined partial decomposition of the solution followed by settling. Solutions, prepared by lixiviation of products of roasting obtained at the Tikhvin Aluminium Plant, were used in the experiments in which particular attention was given to the fact that solubility of silica

Card 1/5

S/136/60/000/04/012/025  
E193/E283

Preparation of High-Grade Alumina from Bauxites by the Roasting  
(Deville-Pechiney) Process

in the aluminate solution increases with falling temperature. To establish the effect of temperature variation on the quality of aluminium hydroxide, the first stage of decomposition of the aluminate solution (i.e. the carbonization process) was carried out at 78 and 85°C; in the second stage (settling), the temperature was allowed gradually to drop to 40 to 45°C. Preliminary experiments were conducted on solutions having the silicon modulus similar to that obtaining under the actual industrial conditions, i.e. equal 370 to 406. A gas containing 10 to 12% CO<sub>2</sub> was used in the carbonization stage, and the "seed" was added in a quantity equivalent to 6 g of alumina per 100 g of Al<sub>2</sub>O<sub>3</sub> in the solution, the SO<sub>2</sub> content in the "seed" varying between 0.03 and 0.13%. The degree of decomposition during carbonization was varied to study the behaviour of the precipitated sodium alumina-silicate during subsequent settling. It was established that, irrespective of the carbonization temperature, precipitation of silica during settling continues up to a given moment, after which its content

Card 2/5

S/136/60/000/04/012/025  
E193/E283

Preparation of High-Grade Alumina from Bauxites by the Roasting  
(Deville-Pechiney) Process

increases. In cases, when the solution at the end of the carbonization stage contained 22 to 25 g/l  $\text{Na}_2\text{O}$ , the  $\text{SiO}_2$  content began to increase at  $\alpha_K > 2.7$ , and aluminium hydroxide of grade G1 was obtained, the degree of decomposition of the solution amounting to 90 to 92%. The results of some experiments are reproduced in Fig 1 under the following headings: temperature,  $^{\circ}\text{C}$ , during carbonization and during settling; condition of the solution (starting solution, after 8 h 15 min carbonization, after 25 h settling; starting solution, after 7 h 45 min carbonization, after 24 h settling; starting solution, after 6 h carbonization, after 20 h settling); characteristics of the solutions (content, g/l, of  $\text{Al}_2\text{O}_3$ ,  $\text{Na}_2\text{O}_{\text{total}}$ ,  $\text{Na}_2\text{O}_{\text{silicate}}$ ,  $\text{Na}_2\text{O}_{\text{carbonate}}$ , and  $\text{SiO}_2$ ;  $\alpha_K$ ; degree, %, of decomposition);  $\text{SiO}_2$  content, %, in washed aluminium hydroxide and related to alumina. These results have shown that when aluminate solutions, with the silicon modulus of 380, are treated by the combined process under

Card 3/5



S/136/60/000/04/012/025  
E193/E283

Preparation of High-Grade Alumina from Bauxites by the Roasting  
(Deville-Pechiney) Process

conditions of high degree of decomposition, alumina of grade no higher than G1 can be produced. It was thus necessary to reduce the silica content in the aluminate solution by the application of high (250°C) temperature and addition of red mud, and to explore the possibility of preparing high-grade alumina from solutions having the silicon modulus higher than that obtaining under industrial conditions. It was established in the course of the subsequent experiments that the silicon modulus can be increased by: (1) agitating the solution with suspension of red mud prior to removal of silica in order to produce nuclei for crystallization of sodium alumina-silicate; (2) agitating the pulp, after removal of silica, at 100°C for several hours to reduce the degree of super-saturation of the aluminate solution with silica; (3) increasing the temperature of the treatment. It was found, also, that the silicon modulus of the solution could be increased by 100 units if removal of silica (following the autoclave treatment) was carried out

Card 4/5

S/136/60/000/04/012/025  
E193/E283

Preparation of High-Grade Alumina from Bauxites by the Roasting  
(Deville-Pechiney) Process

at temperatures  $\geq 200^{\circ}\text{C}$ . The results of the experiments carried out on solutions with the silicon modulus of 550 to 560, are presented in Table 2 under headings identical to those in Table 1. It will be seen that if a solution with a silicon modulus of approximately 550 is used, the combined precipitation method is capable of producing alumina of grade G00 (with respect to the silica content) and G0 (with respect to the alkali content), with the degree of decomposition of the aluminate solution approaching 92 to 93%. There are 2 tables. ✓

Card 5/5

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Obtaining high-grade alumina (GO and G00 brands) by the treatment  
of nepheline rocks. TSvet, mat. 34 no.2:60-65 F '61. (MIRA 14:6)

(Nephelite) (Alumina)

SHVARTSMAN, B.<sup>Kh.</sup>; VOLKOVA, N.S.

Study of the system  $\text{NaAlO}_2 - \text{KAlO}_2 - \text{KOH} - \text{NaOH} - \text{K}_2\text{SO}_4 - \text{Na}_2\text{SO}_4 -$   
 $\text{H}_2\text{O}$  ( $\text{K} - \text{Na} - \text{Al} - \text{O} - \text{H} - \text{S}$ ). Zhur.prikl.khim. 34 no.7:  
1490-1502 J1 '61. (MIRA 14:7)  
(Systems (Chemistry))

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Study of the system  $\text{NaAlO}_2\text{-KAlO}_2\text{-KOH-NAOH-K}_2\text{SO}_4\text{-Na}_2\text{SO}_4\text{-H}_2\text{O}$  ( $\text{K}^+\text{-Na}^+\text{-AlO}_2^-\text{-OH-SO}_4^{2-}\text{-H}_2\text{O}$ ). Zhur. prikl. khim. 34 no. 12:2633-2649 D '61.  
(MIRA 15:1)

(Systems (Chemistry))

L 38847-66 EWF(j)/EAT(m)/T IJP(c) RM/ST  
ACC NR: AR6011877 SOURCE CODE: UR/0001/85/000/016/S048/S048

AUTHOR: Novikov, Ye. G.; Volkova, N. S.; Bykova, G. Ya.

TITLE: Preparation of carbazole-phenol-formaldehyde resins

SOURCE: Ref. zh. Khimiya, Abs. 16S322

REF SOURCE: Sb. Khim. produkty koksovaniya ugley Vost. SSSR. Vyp. 2. Sverdlovsk, 1964, 164-171.

TOPIC TAGS: phenolformaldehyde, phenolic plastic, resin

ABSTRACT: The conditions of preparation of carbazole-base novolac resins were studied in detail. The choice of the conditions for the preparation of carbazole formolites in an easily extractable lamellar form was determined by using pure carbazole and various quantities of formalin and  $H_2SO_4$ . The following optimum conditions for the preparation of formolites were found: carbazole/formaldehyde molar ratio equal to  $1/3$ , amount of  $NH_3$  in the aqueous phase 2%, consumption of  $H_2SO_4$  ( $d = 1.84$ ) 11-12% of total charge, acid diluted to a 50-60% concentration. A new method was developed for preparing novolac resin by condensing the carbazole formolite with phenol and formalin while heating the reagent mixture on an oil bath at 100-105°, distilling off the water, and gradually raising the temperature to 130-140°. Indices of the mechanical and dielectric properties of pressed products prepared from carbazole-phenol-formaldehyde resins with fiberglass as filler are given. The high

Card- 1/2

L. 385h7-65

ACC NR: AR6011877

quality of the plastics obtained was noted, and it was established that carbazole can partially replace phenol in the production of phenoplasts without reducing their quality. M. Mishchenko. [Translation of abstract]

SUB CODE: 11,07

ns  
Card 2/2

VOLKOVA, N.S.; KONKIN, A.A.

Rheological properties of plasticized systems. Khim. volok. no.3:7-11 '65. (MIRA 18:7)

1. Kiyevskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta iskusstvennogo volokna (for Volkova). 2. Moskovskiy tekstil'nyy institut (for Konkin).



VOLKOVA, N.S.; KONKIN, A.A.

Rheological properties of polyvinyl alcohol solutions of medium concentration. Khim. volok. no.4:17-20 '64. (MIRA 18:4)

1. Kiyevskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta iskusstvennogo volokna (for Volkova). 2. Moskovskiy tekstil'nyy institut (for Konkin).

KRISHTOFOVICH, Lyudmila Vyacheslavovna; VOLKOVA, N.S., red.; IGNIINA, I.N.,  
vedushchiy red.

[Tertiary mollusks of Sakhalin] Molluski tretichnykh otlozhenii  
Sakhalina. Leningrad, Nedra, 1964. 342 p. (Leningrad, Vsesoiuznyi  
neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut.  
Trudy, no.232). (MIRA 18:1)

VOLKOVA, N.S.

Some general principles concerning one statically indeterminate trusses  
with minimum volume of the second kind. Trudy KAI no. 77:109-120 '63.  
(MIRA 17:10)

Multiple statically indeterminate trusses with minimum volume of the  
( $n+1$ ) kind. Ibid.:121-129

SHVARTSMAN, B.Kh.; BELETSKIY, M.S.; VOLKOVA, N.S.; LEONENKOVA, T.A.

Composition of sodium and potassium aluminosilicates  
separating out in the process of removal of silicon compounds  
from aluminate-alkali solutions. Zhur. prikl. khim. 36 no.10:  
2103-2108 0 '63. (MIRA 17:1)

VESELOV, A.A.; VOLKOVA, N.S.

Age of the Askaniyskaya series of the northern wing of the  
Black Sea Lowland and the Ol'ginskoye series of the Northern  
Caucasus. Dokl. AN SSSR. 154 no.5:1084-1086 F'64.

(MIRA 17:2)

1. Predstavleno akademikom D.V. Nalivkinym.

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Solubility of sodium metasilicate in alkaline solutions at  
temperatures of 15°, 20°, 30°, and 40° C. Zhur. prikl. khim. 34  
no.5:1155-1157 My '61. (MIRA 16:8)

(Sodium silicates)

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.; SHAVLOKHOVA, T.T.; GABILEV, V.Kh.;  
KASHKOVSKIY, M.S.

Industrial testing of the methods of obtaining high-grade  
alumina from nepheline. TSvet. met. 35 no.7:41-45  
Jl '62. (MIRA 15:11)

(Nepheline)

(Alumina)

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Effect of potassium on the process of desiliconizing aluminate  
solutions. TSvet. met 35 no.6:84-86 Ja '62. (MIRA 15:6)  
(Aluminum—Metallurgy) (Leaching)



SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Composition of aluminocarbonate compounds in aluminum hydroxide  
as affected by the carbonization rate of aluminate solutions.  
Zhur.prikl.khim. 35 no.4:906-908 Ap '62. (MIRA 15:4)  
(Aluminum hydroxide) (Carbonization)

PRONINA, R.F., prepodavatel'; BEGUN, A.I., prepodavatel'; VOLKOVA, N.S.,  
prepodavatel'; MOSHCHUK, Ye.I., prepodavatel'; ~~FUKS, Ye.A.,~~  
prepodavatel'; KHOLCHEVA, A.S., prepodavatel'; ~~CHERNUKHIN, A.Ye.,~~  
red.; ZHAVORONKOV, I.I., red.; KHITROV, P.A., tekhn.red.

[English-Russian railroad dictionary] Anglo-russkii zhelezno-  
doroznyi slovar'. Pod red. A.E. Chernukhina. Moskva, Gos. transp.  
zhel-dor. izd-vo, 1958. 662 p. (MIRA 12:2)

1. Kafedra inostrannykh yazykov Moskovskogo instituta inzhenerov zhelezno-  
dorozhnogo transporta (for Pronina, Begun, Volkova, Moshchuk, Fuks,  
Kholcheva).

(English language--Dictionaries--Russian)  
(Railroads--Dictionaries)

VOLKOVA, N.S.

Design of statically indeterminate trusses having a minimum volume  
of the second type. Trudy KAI no.62:73-80 '61. (MIRA 17:2)

VOLKOVA, N.S.

Fauna of Lower Miocene sediments in the Northern Caucasus.

Trudy VNIGRI no.196. Paleont.sbor. no.3:383-433 '62.

(MIRA 16:4)

(Caucasus, Northern--Mollusks, Fossil)

SHVARTSMAN, B.Kh.; VOLKOVA, N.S.

Removal of silicon compounds from aluminate solutions obtained in  
the treatment of high-silicon alumina-containing ores. Zhur.-  
prikl.khim. 35 no.12:2600-2605 D '62. (MIRA 16:5)  
(Aluminates) (Silicon compounds) (Ore dressing)

VOLKOVA, N.V.; MEL'NICHENKO, I.V.; YAGNIKOV, A.A.

Catalytic action of amino acids and amines in reactions of  
carbonyl compounds. Part 17: Catalytic action of lysine in  
iodination of acetol phosphate and acetone. Ukr. khim. zhur.  
31 no.9:936-942 '65. (MIRA 18:11)

1. Institut organicheskoy khimii AN UkrSSR.

YASNIKOV, A.A.; SHILOV, Ye.A.; VOLKOVA, N.V.

Catalytic action of amino acids and amines in organic reactions.  
Part 15. Ukr. khim. zhur. 30 no.12:1313-1318 '62

(MIRA 18:2)

1. Institut organicheskoy khimii AN UkrSSR.

VOIKOVA, N. V.

"Experimental Study of the Effect of Sulfur Dioxide on Animals."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.



BOYKO, T.S.; VOIKOVA, N.V.; YASNIKOV, A.A.

Catalytic action of amino acids and amines in organic reactions.  
Part 10: Specific action of amino acids and amines in crotonic  
and aldol condensations of butyraldehyde. Ukr. khim. zhur. 29  
no.11:1179-1187 '63. (MIRA 16:12)

1. Institut organicheskoy khimii AN UkrSSR.

VOLKOVA, N.V.; YASNIKOV, A.A.

Kinetics and mechanism of hydrolysis of acetol phosphate. Ukr.  
khim.zhur. 30 no.11:1178-1183 '64. (MIRA 18:2)

1. Institut organicheskoy khimii AN UkrSSR.

VOLKOVA, N.V.; YASNIKOV, A.A. [IAsnikov, O.O.]

Kinetics and mechanism of acetol phosphate iodination in the presence of amines and amino acids. Dop. AN URSR no.7:901-903 '65. (MIRA 18:8)

1. Institut organicheskoy khimii AN UkrSSR.

BELOV, K.F.; GORYAGA, A.N.; VOLKOVA, N.V.

Anomaly of the electric resistance in the compensation temperature region in the ferrite  $\text{NiFe}_{1.26}\text{V}_{0.74}\text{O}_4$ . Fiz. tver.tela 7 no.21474-475 F '65. (MIRA 18:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

VOLKOVA, H.V.

Effect of impurities on the temperature dependence of the  
strength of ionic crystals. Fiz. tver. tela 6 no. 4:1229-1231  
Ap '64. (MIRA 17:6)

1. Fiziko-tekhnicheskii institut imeni Ioffe AN SSSR, Leningrad.

VOLKOVA, N.V.

Influence of small concentrations of sulfur dioxide on the  
quantity of hemoglobin and erythrocytes in the blood of animals.  
Trudy ISGMI no. 54 125-135 '60. (MIRA 14:11)  
(ERYTHROCYTES) (HEMOGLOBIN)  
(SULFUR DIOXIDE—PHYSIOLOGICAL EFFECT)

VOLKOVA, N.V.; DIKUN, P.P.; MASOL'NIKOVA, T.K.

Aerosols and carcinogenic substances in the air of cities.

Trudy LSGMI no. 58:136-148 '60.

(MIRA 14:11)

(LENINGRAD—AIR POLLUTION) (CARCINOGENS)  
(AEROSOLS)

KACHANOV, L. M.; KHEYN, Ye. A.; VOLKOVA, N. V.

Analysis of methods of estimation of the long-period  
strength of metals. Zav. lab. 28 no.12:1533-1535 '62.  
(MIRA 16:1)

1. Leningradskiy gosudarstvennyy universitet (for Kachanov).
2. Leningradskiy metallurgicheskiy zavod (for Kheyne).
3. Tsentral'nyy kotloturbinnyy institut im. I. I. Polzunova  
(for Volkova).

(Metals—Testing)



DYACHENKO, S.S.; VOLKOVA (~~SHARAVSKAYA~~) N.M.; MIZRUKHIN, I.A.

Phagocytic activity of blood leucocytes as affected by prolonged interrupted sleep. *Viziol.zhur.* [Ukr.] 1 no.6:19-27 N-D '55.

(MLRA 10:1)

1. Kiivs'kiy medichniy institut imeni akademika O.O.Bogomol'tsya, kafedri mikrobiologii i psikhatrii.

(LEUCOCYTES) (PHAGOCYTOSIS) (SLEEP—THERAPEUTIC USE)

VOLKOVA, N.M.

Some peripheral blood indexes in children in infectious jaundice;  
based on materials of the Children's Infectious Diseases Hospital  
No.7 of Alma-Ata. Zdrav. Kazakh. 21 no.9:44-48 '61. (MIRA 14:10)

1. Iz kafedry gosptal'noy pediatrii (zav. - professor A.I.Avenirova)  
Kazakhskogo meditsinskogo instituta.  
(HEPATITIS, INFECTIOUS)

1.8000  
18 6200 (1413, 1416, 2813)

25357  
8/032/61/027/006/008/018  
B124/B203

AUTHORS: Liberman, L.Ya., and Volkova, N.V.

TITLE: Tests for relaxation and creeping under tensile load until destruction

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 6, 1961, 724-729

TEXT: The present paper gives the principal results obtained in developing a method of testing the relaxation of stress in one-dimensional elongation of smooth cylindrical specimens under repeated and cyclic load, as well as a method of combined relaxation tests until destruction of the specimens. The authors tested austenitic steel type 12Kh18Ni9Ti (E1612) (0.06% C, 14.9% Cr, 34.92% Ni, 3.68% W, 1.13% Ti), structural steel type 20Kh1M1 (20Kh1M1) (0.21% C, 1.27% Cr, 1.02% Mo, 0.84% V), and steel type 28KhVFA (28KhVFA) (0.28% C, 1.72% Cr, 0.64% W, 0.64% V, 0.16% Zr); the mechanical properties of these steels are tabulated. In the relaxation tests under repeated load, the specimens were loaded repeatedly to the given initial load for 700 - 1000 hr (sometimes longer). In cyclic relaxation tests, the specimen was loaded to the initial stress for 100 hr each until its destruction. The

Card 1/9

25357

8/032/61/027/006/008/018  
B124/B203

Tests for relaxation ...

relaxation stability rises with repeated loading. For studying the effect of previously accumulated plastic deformation on stress relaxation, the method of combined testing for relaxation and creeping was used instead of cyclic relaxation, in which the specimen had previously been in the condition of isothermal creeping at constant nominal stress until reaching the given plastic deformation of 0.1 - 1.0%. After reaching it, the specimen was released and tested for relaxation at the same temperature and an initial stress equal to, or slightly lower than the stress in creeping. The course of relaxation at different accumulated plastic deformation until destruction of the specimen was clarified by alternating creeping and relaxation tests. The Ref. 4 by V.I. Danilovskaya, G.M. Ivanova, and Yu.N. Rabotnov, Izvestiya AN SSSR, OTN, No. 5 (1955) is mentioned in this connection. Fig. 1, a shows the relaxation curves (1-6) and curve 7 characterizing the plastic deformation in all creeping and relaxation cycles of the same specimen of EI612 steel; Fig. 1, b shows the same curves for another specimen of the same steel. Every creeping cycle of the first specimen was continued until reaching the plastic deformation of 0.1 - 0.3%, of the second specimen up to 0.7%; in the former case, the creeping cycle lasted 50-80 hr. in the latter case, 40 hr, the relaxation

Card 2/9

25357 S/032/61/027/006/008/018  
B124/B203

Tests for relaxation ...

cycles lasted 200-450, and 300-600 hr, respectively. Fig.2 illustrates the relation between residual stress and plastic deformation in creeping before each relaxation cycle. The formation of plastic deformation in relaxation, or relaxation and creeping, effects a damage to the steel which, in turn, accelerates the course of relaxation. The degree of damage can be determined by the quantity  $\epsilon_{pd}/\delta_d$ , where  $\epsilon_{pd}$  is the arbitrarily (by relaxation, creeping, or relaxation and creeping) accumulated plastic deformation before starting the relaxation test, and  $\delta_d$  is the elongation at break in creeping, determining the plasticity reserve of the steel. The quantity  $1 - \epsilon_{pd}/\delta_d$  characterizes the plasticity reserve conserved. The relation between relaxation stability ( $\sigma_{rst}/\delta_d$ ) and damage ( $\epsilon_{pd}/\delta_d$ ) or plasticity reserve ( $1 - \epsilon_{pd}/\delta_d$ ) of EI612 steel is given in Fig.3. The elongation at break in the last relaxation of creeping cycle was 1.1 - 2.4%. In 28KhVFTs steel, the stress drop is delayed and the relaxation stability rises with increasing accumulated plastic deformation. In 20Kh1M1F1 steel, the relaxation stability rises continuously with plastic deformation almost to the instant of destruction. In austenitic steel EI612, the relaxation

Card 3/9

25357

S/032/61/027/006/008/018

B124/B203

Tests for relaxation ...

stability drops continuously with rising plastic deformation and consumption of the plasticity reserve, whereas in perlite steels with high (28KhVFTs) and low (20Kh1M1F1) plasticity reserves it rises, and reaches a maximum near the destruction limit. In austenitic steel, the damage increases with plastic deformation, and the intergranular cracks enlarge under the action of stress, which accelerates relaxation, while the damages in perlite steels may "heal on their own", particularly at steadily dropping stress. There are 5 figures, 1 table, and 4 Soviet-bloc references.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut im. I. I. Polzunova  
(Central Boiler and Turbine Institute imeni I. I. Polzunov)

Card 4/9

10.7400

300h1  
S/032/61/027/011/003/016  
B116/B102

AUTHOR: Volkeva, N. V.

TITLE: Analysis of methods for estimating the fatigue strength of metals operating with stress relaxation under periodic loading

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 11, 1961, 1360-1384

TEXT: The authoress reviews some methods used to estimate the fatigue strength of metals. A method is suggested, by which the linear drop of metal strength in time can be exactly determined during fatigue tests. According to the method of L.P. Nikitina (TsKTI) [Abstracter's note: paper not published], the fatigue strength is estimated from the formula

$$\sigma_{\text{mean}} = \frac{\sum_{i=1}^k \sigma_i \tau_i}{\sum_{i=1}^k \tau_i}$$
, where  $\sigma_i$  is the stress applied, and  $\tau_i$  is the duration of application. The "specific work"  $\sigma_i \tau_i$  leading to destruction is,

however, stress dependent. The portion of "specific work" at high stresses is not very great but able to cause considerable damage. An idea of Vidal' (Zharoprochnyye splavy pri izmenyayushchikhsya temperaturakh i

Card 1/14

30041

S/032/61/027/011/008/016

B116/B102

Analysis of methods for estimating ...

napryazheniyakh, - Heatproof Alloys at Varying Temperatures and Stresses, Gosenergoizdat (1960)) was utilized in Ye. A. Kheyn's method (Energomashinostroyeniye, no. 11 (1959)). That stress is taken as equivalent stress which results in a mean creep rate leading to destruction within the time  $t$ . This method shows the same principal error. The equivalent stress will, in general, result in a mean rate which is different from the creep rate. In addition, the determination of destruction from the creep rate is very inexact. The method of L. M. Kachanov (Izvestiya AN SSSR, OTN, no. 5 (1960)) is based on his phenomenological theory of destruction due to creep. He proceeds from the assumption that contractions will slow down the reduction of stresses and that the relaxation cycles following the first stress cycle can be determined from the curve of permanent relaxation. Experimental data show that this assumption is unjustified since it yields too short periods of time before destruction. V. V. Burdukskiy (Nekotoryye voprosy konstruktivnoy prochnosti pri relaksatsii napryazheniy v metallakh. Avtoreferat dissertatsii, Institut metallurgii im. Baykova AN SSSR (Institute of Metallurgy imeni Baykov AS USSR) 1956) defines the lifetime

Card 2/4



Analysis of methods for estimating ...

300h1  
S/032/61/027/011/008/016  
B116/B102

as  $(\tau_i/\theta_i)^m$ , where  $\tau_i$  is the time for which the stress in question is applied, and  $\theta$  is the time until destruction at this stress.  $\Sigma$  is suggested as a criterion for the accumulation of damages. However, the results obtained at  $m \neq 1$  and constant stress are absurd. After this review the authoress describes her method. It is assumed that strength drops linearly during fatigue tests and that the sum  $D$  of relative times at the instant of destruction is nearly equal to unity. A family of straight lines,  $\sigma=f(\log t)$ , is drawn in parallel with the fatigue-strength line. These straight lines are lines of the equivalent damage (fig. 2). The spread of the fatigue strength lies between two straight lines which are parallel to those obtained from existing points by the method of least squares. The damage corresponding to the central straight line is taken as a unit which determines the time before destruction at a given stress. Thus, one obtains a range of possible sums of the relative times leading to destruction of the material. Several tests (repeated contraction during relaxation or successive loading with creep at constant stress) have shown that satisfactory results can be obtained only by this method. In order to find a method for extrapolating the relaxation curve, it is necessary that the dependence of the variation in relaxation strength

Card 3/14

200h1

3/032/61/027/011/008/016  
B116/B102

Analysis of methods for estimating ...

on the accumulation of plastic deformations be examined. There are 3 figures, 3 tables, and 5 Soviet references.

ASSOCIATION. Tsentral'nyy kotloturbinnyy institut im. I. I. Polzunova  
(Central Boiler and Turbine Institute imeni I. I. Polzunov)

Fig. 2. Fatigue strength of steels 3N612 (EI612) (a) and 20X1M1F1 (20Kh1M1F1) (b). Legend. (1) Mean stress calculated from the "specific work" of destruction; (2) equivalent stress corresponding to the sum of relative times; (3) equivalent stresses calculated by Khayn's method at the mean final stress of the stress cycles; (4) interval of possible values of the equivalent stress, calculated by Khayn's method at different residual stresses of the stress cycles; (5) interval of possible values of stress corresponding to the mean creep rate; a  $t_0$  the test temperature is 650 and 560°C, respectively; abscissa, time  $\tau$ , hr; ordinate, stress  $\sigma$ , kg/mm<sup>2</sup>.

Card 4/4

VOLKOVA, N.V.; SHILOV, Ye.A.; YASNIKOV, A.A.

Catalytic action of amino acids and amines in reactions of carbonyl compounds. Part 16: Kinetics and mechanism of iodination of acetol phosphate in the presence of ethylenediamine. Ukr. khim. zhur. 31 no.1:56-66 '65. (MIRA 18:5)

1. Institut organicheskoy khimii AN UkrSSR.

VOLKOVA, N.V.; YASNIKOV, A.A.

Products of phosphorylation of acetol by phosphorus oxychloride  
in quinoline. Ukr. khim. zhur. 31 no.1:119-120 '65. (MIRA 18:5)

1. Institut organicheskoy khimii AN UkrSSR.

L 10370-65 EMI(m)/EPF(c)/EPR/ESP(b) Pr-4/PS-4 ESD(gs)/AS(ep)-2 RAEM/5  
 ACCESSION NR: AP4046629 JD/JW 8/0181/64/006/010/114/3117

AUTHOR: Volkova, N. V.

TITLE: Temperature dependence of the brittle strength of ionic crystals B

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3114-3117

TOPIC TAGS: ionic crystal, temperature dependence, brittle state, lithium compound, tensile strength, compression strength, shear strength, dislocation/net formation

ABSTRACT: <sup>16</sup> <sup>1</sup> Lithium fluoride crystals, grown by the Kyropoulos method, contained 0.002% Mg ("pure" crystals) or 0.02% Mg ("impure" crystals). Their ultimate tensile strength  $\sigma_b$ , compression  $\sigma_c$ , yield stress (defined as the stress at which the strain-stress curve departed from linearity) and the critical shear stress  $\sigma_{cr}$  (the stress at which nonuniform generation of dislocations began) were measured between

Card 1/2

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ACCESSION NR: AP4046629

20°C and -160°C; they ranged from 1 to 10 kg/mm<sup>2</sup>. The parallel temperature dependences of  $\sigma_b$  and  $\sigma_{cr}$  for "pure" crystals and the similarity of their numerical values suggested that nonuniform generation of dislocations preceded and determined the fracture at low temperatures. Local concentrations of stresses were produced on cooling due to the difference between the linear thermal expansion coefficients of LiF and Mg, which was probably present as MgF<sub>2</sub>. The lack of temperature dependence of  $\sigma_b$  and  $\sigma_{cr}$  for "impure" crystals was due to the compensating effect of two opposite influences: cooling and increase of the effective stress (due to local tensile stresses at impurities). Orig. art. has: 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)

SUBMITTED: 12May64

ENCL: 00

SUB CODE: SS

UR REF SOV: 005

OTHER: 003

Card

2/2

SHIGORIN, D.N.; VOLKOVA, N.V.; PISKUNOV, A.K.; GUREVICH, A.I.

Studying the triplet states of molecules by the methods of  
luminescence and electron paramagnetic resonance. Opt.1 spektr.  
12 no.5:657-659 My '62. (MIRA 15:5)  
(Molecular dynamics) (luminescence)  
(Paramagnetic resonance and relaxation)

GRUM-GRZHIMAYLO, S.V.; BRILLIANTOV, N.A.; VOLKOVA, N.V.; DOBZHANSKIY, G.F.;  
SVIRIDOV, D.T.

Light absorption spectra of nickel ammonium sulfate monocrystals  
at temperature from 290° to 1.7°K. Kristallografiia 7 no.1:  
84-88 Ja-F '62. (MIRA 15:2)

1. Institut kristallografii AN SSSR i Moskovskiy gosudarstvennyy  
universitet im. M.V. Lomonosova.  
(Nickel ammonium sulfate crystals--Spectra)



VOLKOVA, N.V.; YASNIKOV, A.A.

Mechanism of the condensation of enamines with aldehydes.  
Dokl. AN SSSR 149 no. 1:94-96 Mr '63. (MIRA 16:2)

1. Institut organicheskoy khimii AN UkrSSR. Predstavleno  
akademikom B.A. Kazanskim.  
(Amines) (Aldehydes)

L 38537-65 EWT(1)/EWT(m)/T/EWP(b)/EWA(d)/EWP(w)/EWP(t) Pad IJP(c) JW/JD/HW

ACCESSION NR: AP5005285

S/0181/65/007/002/0474/0476

AUTHOR: Belov, K. P.; Goryaga, A. N.; Volkova, N. V.

34  
33  
B1

TITLE: Anomaly of electric resistivity in the region of the compensation temperature in the ferrite  $\text{NiFe}_{1.26}\text{V}_{0.74}\text{O}_4$

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 474-476

TOPIC TAGS: nickel ferrite, temperature dependence, electric resistivity, compensation temperature, activation energy, resistance anomaly

ABSTRACT: Continuing an earlier study of the temperature dependence of the electric resistivity of certain ferrites (ZhETF v. 38, 1914, 1960) with the special aim of determining the nature of the anomalies in the region of the compensation point, the authors made a thorough study of the electric resistivity ( $\rho$ ) of the ferrite  $\text{NiFe}_{1.26}\text{V}_{0.74}\text{O}_4$ , which has a lower resistivity and a lower activation energy than the previously studied ferrites. The sample was prepared by a usual ceramic technology from the pure oxides  $\text{NiO}$ ,  $\text{Fe}_2\text{O}_3$ , and  $\text{V}_2\text{O}_3$  and annealed in vacuum at 1100C. The test results have shown that in the region of the temperature of com-

Card 1/2

L 38537-65

ACCESSION NR: AP5005285

compensation of the magnetic moments of the sublattices ( $\theta_c$ ) there is a complicated anomaly in the plot of  $\ln(\theta_c/T)$ . The experimental results are in qualitative agreement with the theoretical deductions of Ye. A. Turov et al (Collection "Ferriti" [Ferrites], Izd. AN BSSR, Minsk, 1960). The greater anomaly in the ferrite investigated in the present research, as compared with the previously investigated ferrite, is due to the lower resistivity and to the strong increase in magnetization on going through the compensation point. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 23Jul64

ENCL: 00

SUB CODE? EC, EM

NR REF SOV: 004

OTHER: 002

Card 2/2 *pvb*

KOKHANOVICH, M.V.; VOLKOVA, O.A.; VOLYNSKIY, A.M.

Changes in vascular reactions depending on the location of the application of therapeutic mud and its temperature. Vop. kur., fizioter. i lech. fiz. kul't. 29 no.4:330-336 JI-Ag '64. (MIRA 18:9)

1. Kafedra fakul'tetskoy terapii (zav. - prof. M.V.Kokhanovich) i kafedra normal'noy fiziologii (zav. - dotsent A.M.Volynskiy) Krymskogo meditsinskogo instituta, Simferopol'.

I 45783-66 EWT(1)/EWT(m)/EEC(k)-2/BWP(k)/T/EWP(t)/ETI IJP(c) WG/JD/JW/JG  
 ACC NR: AP6030966 SOURCE CODE: UR/0181/66/008/009/2668/2671

AUTHOR: Volkova, N. V.; Likhachev, V. A.; Ryvkin, S. M.; Salmanov, V. M.;  
Yaroshetskiy, I. D.

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR, Leningrad (Fiziko-  
 tekhnicheskiiy institut AN SSSR)

TITLE: Destruction of LiF single crystals by laser radiation

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2668-2671

TOPIC TAGS: lithium fluoride, laser radiation, laser effect, crystal defect, crystal  
 dislocation phenomenon, laser r and d

ABSTRACT: This is a continuation of earlier studies of damage to transparent die-  
 lectrics by laser radiation (ZhETF v. 50, 1187, 1966), where principal attention was  
 paid to amorphous substances. The present article deals with the effect of the ener-  
 gy contained in the laser pulse on the general evolution of damage to single-crystal  
 LiF and describes the dislocation structure in the cleavage surfaces. The experi-  
 mental procedure is similar to that described in the earlier paper. A pulsed  
 neodymium glass laser was used, with the light beam directed always along  
 the (001) crystal axis. Damage occurred at pulsed energy density exceeding 100 J/cm<sup>2</sup>  
 corresponding to  $\sim 0.2 \times 10^6$  W/cm<sup>2</sup>. At this threshold value, damage usually started

Card 1/2

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ACC NR: AP6030966

with a single crack in the (001) plane, perpendicular to the beam direction. With increasing energy, additional cracks appeared and their character and pattern varied with the energy. The evolution of the damage is explained from the point of view of the existence of a hypersonic damage mechanism, wherein the crack is produced first by a hypersonic wave, and absorption of heat in the crack leads to further disintegration. The peculiar dislocation pattern observed on the cleavage surface (concentric circles or ellipses) is attributed to the intermittent character of propagation of the crack front, due in turn to spiking. Orig. art. has: 3 figures. [02]

SUB CODE: 20/ SUBM DATE: 31Jan66/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 5085

Card 2/2 pb

ACC NR: AP6035750

SOURCE CODE: UR/0413/66/000/019/0120/0120

INVENTORS: Fedot'yev, N. P.; Vyacheslavov, P. M.; Burkat, G. K.; Volkova, N. V.

ORG: none

TITLE: An electrochemical method for obtaining a binary silver alloy. Class 48, No. 186825 [announced by Leningrad Order of the Workers Red Banner Technological Institute imeni Lensovot (Leningradskiy ordena Trudovogo Krasnogo Znameni tekhnologicheskiiy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 120

TOPIC TAGS: silver, alloy, silver containing alloy, binary alloy, cobalt compound, potassium compound

ABSTRACT: This Author Certificate presents an electrochemical method for obtaining a binary silver alloy from an electrolyte containing silver cyanide complex. To improve the resistance to abrasion, hardness and the resistance to corrosion of the precipitated coatings, the process is conducted at a temperature of 40--45C and at a current density of 0.1--0.5 a/dm<sup>2</sup>, while the electrolyte is being mixed. The composition of the electrolyte should include pyrophosphates of cobalt and of potassium in the following proportions of the components (in g/liter): metallic silver -- 0.1--0.4; metallic cobalt -- 2.0--3.2; free potassium pyrophosphate --

100  
SUB CODE: 11, 07/ SUBM DATE: 05 May 65

UDC: 621.357.7:669.225'25

ACC NR: AP005849

SOURCE CODE: UR/0181/66/002/012/3595/3601

AUTHOR: Volkova, N. V.; Likhachev, V. A.; Salmanov, V. M.; Yaroshetskiy, I. D.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-  
tekhnicheskiy institut AN SSSR)

TITLE: Kinetics of formation and healing of damage produced in lithium-fluoride  
single crystals by a laser beam

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3595-3601

TOPIC TAGS: laser effect, semiconductor laser, semiconductor single crystal, crystal  
lattice dislocation, ~~cracking~~ **CRACK PROPAGATION**

ABSTRACT: This is a continuation of earlier work (ZhETF v. 50, 1187, 1966 and elsewhere), where it was shown that a laser beam produces cracks in alkali-halide crystals although no detailed description was given of the nature of the cracks). To determine this structure and to explain the mechanism whereby the damage is initiated, the authors investigated LiF single crystals measuring 20 x 20 x 20 mm cleaved along the cleavage planes. A neodymium laser operating in the spiked mode was used. The beam focusing procedure was the same as in the earlier work, the damage was examined under a microscope, and the dislocation structure was revealed by selective etching. Besides confirming the earlier results, the present tests demonstrated that the damage produced by the laser pulse consists of a main crack in the cleavage plane (001) normal to the beam, and dislocation slip along directions forming a rosette-like

Card 1/2

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ACC NR: AP7005849

pattern, the occurrence of which can be interpreted by assuming a suitable combination of thermal and elastic stresses produced in the crystal by the passage of the laser beam and hypersonic oscillations accompanying it. Annealing the crystal after the damage, either in air or in the oven, led to healing of the cracks characterized by a unique structure of the front of the annealed rosette. While the causes of this healing are not clear, they definitely can be ascribed to transport of matter via the gas phase, as proposed in a number of papers. The authors thank S. M. Ryvkin for continuing interest and a discussion of the results. Orig. art. has: 5 figures.[02]

SUB CODE: 20/ SUBM DATE: 27May66/ ORIG REF: 007/ OTH REF: 003 /

ATD PRESS: 5117

Card 2/2

(N) L 4012-66 ENT(d)/ENT(1)/EWP(v)/EWP(k)/EWP(h)/EWP(1)/EWA(h)/ETC(π) W1/GW  
 UR/0286/65/000/015/0088/0088 35  
 55 55 55 55  
 ACCESSION NR: AP5024408

AUTHORS: Popandopulo, G. K.; Zudova, L. A.; Shenderovich, I. M.; Volkova, O. A.  
 55 55 55 55

TITLE: Attachment for water level recorders. Class 42, No. 173430  
 12,55

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 88

TOPIC TAGS: liquid level instrument, remote control system  
 25 14

ABSTRACT: This Author Certificate presents an attachment for water level recorders, containing an electric current source, a device for obtaining heteropolar electric signals obtained as a result of a change in the monitored level, and a double lead communication line. To increase the reliability of remote control, the limiting resistance of the electric current source is shunted by a normally open contact unit which closes at a predetermined level (see Fig. 1 on the Enclosure). Orig. art. has: 1 diagram.

ASSOCIATION: Nauchno-issledovatel'skiy institut gidrometeorologicheskogo priborostroyeniya (Scientific Research Institute of Hydrometeorological Instrument Manufacturing)  
 55

Card 1/3

UDC: 681.128.6:621-519

L 4012-66  
ACCESSION NR: AP5024408

SUBMITTED: 30Aug63

ENCL: 01

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

Card 2/3

L 4012-66  
ACCESSION NR: AP5024408

ENCLOSURE: 01

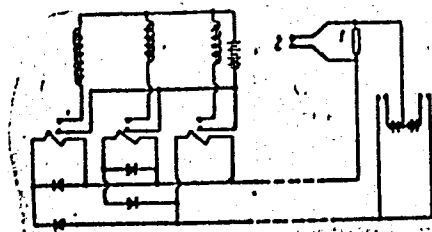


Fig. 1. resistance of electric current  
source; 2- normally open contact unit

*lek*  
Card 3/3